The Sentinel: January 10, 2022
News and events happening in the Computer Science Department

CS Tea Talk:

Tea Talks take place on Thursdays 4:00-5:00 in Olin 306. Hear from compelling speakers and have fun with other people interested in CS.

(Note: Masking is required at CS Tea events, as these events are open to off-campus visitors.)

- **January 13:** **Laurel Orr ('13)** **Entity-Centric AI: Integrating Structured Data into ML Pipelines**. Industrial machine learning pipelines are experiencing a paradigm shift from customized architectures and hand curated features to self-supervised model ecosystems where models are trained without manual labels and adapted to hundreds of downstream tasks. An increasingly important component of these pipelines is their integration of structured entity knowledge, often through entity embeddings, to downstream tasks. In this talk, I will first motivate the use of structured entity data, both from a ML performance and systems perspective. I will then introduce my main research project in this space, an entity extraction system, Bootleg, designed for the long-tail of entity data, and how this project, which started with a vague drawing on a whiteboard, ended up as the anchor point for my entire research trajectory. The goal of this talk is to provide a few interesting technical nuggets about how to build and maintain entity-centric pipelines as well as give a "brass tacks" talk of my experiences in academic research and how I landed on this research direction. Laura Orr is currently a PostDoc at Stanford.

- **January 20:** **Wendy Ju** **The Car is a Vehicle for Understanding Interaction at Scale**

OPPORTUNITIES:

Research Experience for Undergraduates (REU):
Data Science Across Disciplines 2022 Summer REU Program hosted by Marquette University – Department of Computer Science. We are seeking motivated undergraduate students of all levels majoring in data science, computer science, statistics and mathematics. Application deadline is February 13.
Research themes/projects from different areas in data science such as core data science, exercise science, healthcare, social science and spatial analytics.
3-day mini boot camp on introduction to data science (first week of the program).
Mentoring by researchers at Marquette University, Milwaukee, WI.
Professional and leadership development opportunities.
Poster presentation, technical report and publication opportunities.

REU students will receive:
- A stipend of $600 per week ($6,000 for 10 weeks)
- Allowance for food
- Allowance for professional conference registration and travel
- Housing on campus at Marquette

Applicants must:
- Be a United States Citizen or permanent resident,
- Be unemployed for the ten weeks of the program, or on leave / not actively working, and
- Be an undergraduate student in good standing in a major related to data science, computer science, statistics, or mathematics.

 Women and students from underrepresented groups, as well as students from institutions with little or no opportunity for undergraduate research are encouraged to apply.   Program details available at **https://reu.cs.mu.edu/** **Applications** **will be reviewed starting January 31. Deadline is February 13.**

Part-Time Position Available with the Category Management team at Kellogg Company, supporting Target Kellogg's:
This is a temporary support position working closely with the people and processes that ensure Kellogg's delivers the highest quality food to Target. "We're looking for someone who has a passion for analytics – we want to bring out the tiger in you!"
- 20-25 hours week, flexible around school schedule
- Opportunity for full time during summer break and upon graduation
- Located in Minneapolis area, although we are currently remote
- Interested in analyzing data and recommending actions
- Team player and ready to help "wear many hats" to drive results

Click here for additional information and check out the K-Values.

Oregon State University REU: "Robots in the Real World"
10-week "Robots in the Real World" summer Research Experiences for Undergraduates Site, which has been running for eight years, most recently supported by the National Science Foundation under award CNS 1950927. This year's program will run from June 20 to August 26, 2022, on the main OSU campus in Corvallis, OR. Areas of robotics research for students with backgrounds in computer science, mechanical engineering, electrical engineering, mathematics, physics, social science, or any closely related fields. The specific projects for 2022 are listed on the project page. **The application form will close February 9, 2022, at 11:59pm.**

Carnegie Mellon Robotic Institute Summer Robotics Research Opportunities for Undergraduate Students:
Passionate about Robotics & AI? Carnegie Mellon's Robotics Institute Summer Scholars <riss.ri.cmu.edu> provides high-quality undergraduate research experiences to propel your academic future (What is RISS?). Conduct research in robotics and artificial intelligence with over 50 pioneers, https://riss.ri.cmu.edu/mentors/> defining the field (e.g. autonomy, field robotics, artificial intelligence, machine learning, human-robot

interaction, computer vision, graphics, and space robotics). **Applications accepted through January 15, 2022 at 12 noon EST.** Check here for additional details.

Bruins-In-Genomics (B.I.G.) Summer Program: Do you have a passion for Computing, Biology, Math, and Science? Bruins-In-Genomics (B.I.G.) Summer Research Program is an 8-week full time immersion program (June 20-August 12) for undergraduates interested in learning how to read and analyze genes and genomes. Through this program students will have the opportunity to experience graduate-level coursework, and learn the latest cutting-edge research, tools and materials used by leading scientists to solve real-world problems. Rolling admissions: **First application deadline for early review is January 3, 2022, 5:00pm PST. (final deadline March 1)** Click here to apply to Big Summer 2022.

National Center for Atmospheric Research – HAO – Summer Internships: This opportunity is brought to us by a Carleton parent, Bill Anderson P'23 (andersnb@ucar.edu). You are welcome to reach out to Bill with any general questions about the organization. The SIParCS Program (pronounced "sigh-parks") at the National Center for Atmospheric Research is aimed at university students who are interested in pursuing a career in such areas as:
- Application Optimization
- Data Science
- Machine Learning
- Numerical Methods
- Software Engineering
- Supercomputing Systems Operations
- Visualization

For Summer 2022, we are currently planning for an in-person internship program although everything is bound by the local safety and health regulations due to COVID-19. In 2021 and 2020, our entire program continued as a completely remote internship program. Additional details are available in Handshake. **Application deadline: January 10, 2022, 10:59pm.**

Distributed Research Experience for Undergraduates (DREU)
Are you an undergraduate student interested in exploring research in computer science? DREU interns have the opportunity to be directly involved in a research project and interact with graduate students and professors on a daily basis. This experience is invaluable for those who are considering graduate school; DREU will provide a close-up view of what graduate school is really like and increase interns' competitiveness as an applicant for graduate admissions and fellowships. **Applications are being accepted now through February 15.**

Carleton Career Center Postings:
- Web Developer at Harvard Medical School – posting available through Handshake
- Internships at Pixar – Summer 2022. Application Deadline is February 13

Calendar of Upcoming Events:
Jan 13:   CS Tea 4pm, Olin 310
Jan 20:   CS Tea 4pm, Olin 306 or 310 (to be determined)

Want to receive this newsletter and other CS updates? Sign up for the cs-interest mailing list by contacting Paula Stowe.